

Advances in Mobility Management for IP Networks

Editors:

Aisha Hassan Abdalla Hashim

Othman Khalifa

Shihab A. Hameed



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INTRODUCTION TO MOBILITY MULTICAST SCHEMES

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8.1 OVERVIEW

This part of the book is an extensive documentation of existing and novel extensions to mobile multicast schemes. Mobility multicast schemes are first introduced and afterwards, the authors provided a qualitative study of mobility management approaches. A thorough investigation of the architecture, intra-domain movement, inter-domain movement, message format, and signaling flow of M-HMIPv6/CXTP is provided in this part of the book. The reader is also offered a step-by-step guideline on the development of the service recovery time and signaling cost function together with the evaluation methods in computer networking. The reader is further given the technical knowhow of utilizing Ns2 environment for M-HMIPv6. With respect to context transfer, the issues of (1) service recovery of multicast hierarchical mobile IPv6, (2) signaling cost of M-HMIPv6, (3) packet loss in M-HMIPv6, and (4) evaluation of handover latency in M-HMIPv6 are meticulously discussed. In order to provide the reader with practical examples and useful results, simulation study of H-MIPv6 and M-HMIPv6/CXTP is provided together with a highlight of future research directions in this area. MIPv6 extensions, IP multicast, mobility approaches to support IP multicast, hierarchical mobile multicast context transfer (HMMCT), simulation environment of HMMCT, and analytical study of HMMCT are among the vital topics that are conclusively expounded upon in this book part.

The design consideration focused on the integration and enhancement of Multicast Hierarchical Mobile IPv6 with Context Transfer Protocol. Generally explained the support of Multicast Listener Discovery in routers. Also gives general idea on how Context Transfer Protocol is being applied to Multicast Hierarchical Mobile IPv6 environment.

There are several work approaches which have been proposed in order to provide better handover performance in mobile multicast of Mobile IPv6 (MIPv6) [1]. This includes the work in Hierarchical MIPv6 (HMIPv6) [2] and Multicast HMIPv6 (M-HMIPv6) [3]. In this chapter, the design consideration focused on the integration and enhancement of M-HMIPv6 with Context Transfer Protocol (CXTP) [4]. M-HMIPv6 with Context Transfer Protocol is generally described in this chapter.